1.   PURPOSE

This Quality Implementing Procedure (QIP) describes the organizational structure, functional responsibilities, levels of authority, and lines of communication for all Yucca Mountain Site Characterization Project (YMP) - Lawrence Berkeley National Laboratory (LBNL) activities. The procedure also identifies the interface with, and independent reporting structure for, quality assurance (QA) responsibilities.

2.   SCOPE

This procedure is applicable to the organizations and personnel directly responsible for establishing and executing work assignments supporting YMP-LBNL activities. This procedure describes the overall responsibilities of the YMP-LBNL organization to meet the requirements of the U.S. Department of Energy (DOE) Office of Civilian Radioactive Waste Management (OCRWM*) Quality Assurance Requirements and Description* (QARD), DOE/RW-0333P, and may be supplemented by detailed responsibility descriptions defined in OCRWM Administrative Procedures (APs), YMP Administrative Procedures (YAPs), YMP-LBNL-QIPs and YMP-LBNL-Technical Implementing Procedures (TIPs). This procedure is consistent with the upper–tier LP-1.1Q-OCRWM, *Organization,* and LP-1.0Q-BSC, *Organization* which describe the QA organizational structure for DOE/OCRWM Office of Quality Assurance (OQA), and Bechtel SAIC Company, LLC (BSC), respectively.

3.   PROCEDURE

3.1   Changes to Procedure

The YMP-LBNL Project Manager (PM) shall direct the Engineering Assurance (EA) Manager or designee to revise this QIP based on DOE or LBNL changes to the organization depicted in Attachment 1 or organizational responsibilities described in this procedure. Changes shall be prepared in accordance with the YMP-LBNL-QIP-5.2, *Preparing Quality and Technical Implementing Procedures.* Reviews will be in accordance with YMP-LBNL-QIP-6.1, *Document Review*, and the QARD (which requires the review of OQA).

3.2   Assignment of Work and Delegation of Authority

The PM retains responsibility for the overall YMP-LBNL implementation of the OCRWM QA Program. The PM has assigned responsibilities and delegated authority to key YMP-LBNL staff members as described in Sections 3.4 (with the exception of Sections 3.4.3 and 3.4.4), 3.5, and 3.6 below.   Further responsibilities have been assigned in APs, YAPs, YMP-LBNL-QIPs and YMP-LBNL-TIPs, and by means of input to assigned portions of Technical Work Plans (TWPs) and Scientific Investigation Test Plans (SITPs), which are reviewed by the PM.

Positions or organizations responsible for establishing and executing the quality program may delegate work and/or signature authority to other positions or organizations. Such delegations shall be made in writing, except in those cases where "or designee" is stated within a QIP or TIP. The positions or organizations making the delegation shall retain overall responsibility for the delegated work. Documented delegation of authority shall be transmitted to the LBNL Records Coordinator for submittal to the Records Processing Center (RPC) in Las Vegas in accordance with AP-17.1Q, *Record Source Responsibilities for Inclusionary Records*.

3.3   Resolution of Quality Disputes

Conflicts or disputes involving quality or technical issues arising from a difference of opinion between YMP-LBNL personnel shall be referred to successively higher levels of management within YMP-LBNL and ultimately be resolved by the PM or designee.   Quality-related disputes involving YMP-LBNL personnel, BSC QA personnel, and/or OCRWM OQA personnel that cannot be resolved shall be referred to successively higher levels of management within YMP-LBNL, BSC QA, and OCRWM OQA, and be finally resolved by the PM, BSC Manager of QA, and/or Director, OQA, as applicable.

3.4   YMP-LBNL Organizational Relationships, Responsibilities, and Interface with DOE and BSC Quality Assurance Organizations

The YMP-LBNL project is executed within the LBNL Earth Sciences Division (ESD), as part of the Nuclear Waste Program (NWP). The organizational structure of the YMP-LBNL project and its relationship with BSC QA, and OCRWM OQA is shown in Attachment 1, YMP-LBNL Organizational Structure and BSC QA, DOE/ OCRWM OQA Interface.

Overall responsibilities for key YMP-LBNL staff members are described herein, in Sections 3.5 and 3.6 below, and in OCRWM QA Program and supplementary YMP-LBNL QA procedures.   Throughout the program, quality shall be achieved and maintained by those who have been assigned responsibility for performing the work. Persons or organizations not directly responsible for performing the work shall verify quality achievement.

3.4.1   Program Manager, Nuclear Waste Program (Project Manager)

The LBNL Director of ESD has the overall responsibility for the management of LBNL's commitment to the YMP.   The ESD Director delegates the

responsibility and authority for the YMP-LBNL project to the ESD NWP Manager, henceforth referred to as the Project Manager (PM). The PM reports to the ESD Director, and has overall responsibility for ensuring the achievement and maintenance of quality on the YMP. The PM shall issue and maintain a policy statement directing mandatory compliance with the OCRWM QA Program including supplementary YMP-LBNL QA procedures (i.e., QIPs and TIPs) by YMP-LBNL personnel. Specific responsibilities of the PM include, but are not limited to:

A. authorizing the establishment of and approving YMP-LBNL QA procedure documents;

B. providing overall direction for project planning and assigning technical work;

C. providing final resolution on conflicts or disputes within LBNL involving quality; for quality-related disputes between organizations, providing final resolution on conflicts together with the BSC Manager of QA and/or the Director, OQA, as applicable.

D. assigning qualified Checkers and Technical Reviewers to review scientific documents, and providing oversight of the YMP-LBNL review process.

3.4.2   Deputy Project Manager

The Deputy PM reports to the PM, and has responsibility for oversight of the NWP EA Technical Support Staff and other tasks as delegated by the PM.

3.4.3   Director, Office of Quality Assurance

The Director, OQA, within OCRWM is responsible for YMP QA functions throughout the program. The responsibilities and independent reporting hierarchy of OCRWM OQA are identified in LP-1.1Q-OCRWM.

3.4.4   BSC Manager of QA

The Manager of QA within BSC is responsible for QA direction, coordination, and oversight of YMP participants including LBNL and other national laboratories. An onsite BSC QA Representative has been assigned to the YMP-LBNL project to provide consultation on quality-related matters, perform independent QA oversight activities, and to act as the primary liaison between YMP-LBNL staff, and BSC QA. The responsibilities and independent reporting hierarchy of BSC QA are identified in LP-1.0Q-BSC.

3.5   LBNL Nuclear Waste Program Engineering Assurance Technical Support

The NWP EA technical support staff are a part of the Technical and Administrative Support Department within ESD and report to the Deputy PM on the YMP. EA staff

under the direction of the Deputy PM, together with the EA Manager, work in collaboration with the Principal Investigators (PIs) and scientific staff to assist with implementing the OCRWM QA Program and supplementary LBNL QA procedures. EA staff are responsible for assisting in the integration of quality requirements into the technical activities. EA staff, together with line technical staff, are responsible for identifying problems relating to quality and for working with other technical/administrative personnel to define and implement solutions to problems.

3.5.1   Program Coordinator

The Program Coordinator, in conjunction with the PIs, is responsible for coordinating the development and oversight of all aspects of the project including work scope, budget, the YMP-LBNL planning, scheduling, and oversight of DOE and BSC contractual deliverables. Responsibilities also include oversight of checking and technical data processes and facilitating the YMP-LBNL deliverable review process.

3.5.2   Engineering Assurance Manager

The EA Manager is responsible for directing the implementation of the OCRWM QA Program within LBNL. The EA Manager interfaces with project personnel on quality matters as necessary, and will refer any quality-related unresolved conflicts and disputes to the PM for further resolution. The responsibilities of the YMP-LBNL EA Manager include, but are not limited to:

A. overseeing the proper establishment and implementation of the OCRWM QA Program, reporting EA program information to management, EA staff, and other affected organizations as appropriate;

B. serving as a focal point in developing, reviewing, interpreting, and approving the LBNL QA procedures to assure they meet LBNL and DOE QA requirements;

C. maintaining a liaison with BSC and OQA to assure compliance with the OCRWM QA Program;

D. identifying quality problems, initiating, recommending, or providing solutions to quality problems; together with the PM identifying self-assessments to be performed, developing a schedule and conducting assessments in accordance with AP-2.20Q, *Self-Assessments*. This includes implementing activities described in AP-REG-001, *Managing Lessons Learned*, and AP-REG-004, *Condition/Issue Identification and Reporting/ Resolution System* (CIRS*)*;

E. overseeing software, scientific notebook, records coordination, YMP-LBNL indoctrination/training, and verification of education and experience activities.

3.5.3   Project Control Coordinator

The Project Control Coordinator is responsible for assisting the PM in the development of budgetary components of proposals, maintenance of YMP computer systems, and coordination of equipment purchases. Responsibilities also include oversight of YMP procurement and Measuring and Test Equipment (M&TE) activities.

3.5.4   Technical Data Coordinator

The Technical Data Coordinator is responsible for verification and qualification of data, developing Records Road Maps for all data submittals in accordance with AP-3.15Q, *Managing Technical Product Inputs*, and submitting YMP-LBNL Key Data to the appropriate data base within the YMP Technical Data Management System (TDMS) in accordance with AP-SIII.3Q, *Submittal and Incorporation of Data to the Technical Data Management System.*

3.5.5   Procurement Coordinator

The Procurement Coordinator is responsible for coordinating procurement activities between YMP-LBNL staff requesting quality-affecting items or services and BSC procurement in accordance with YMP-LBNL-QIP-4.3, *Procurement Request Initiation and Acceptance of "Q" Products/Services* and AP-7.7Q, *Acceptance of Items and Services.*

3.5.6   Software Coordinator

The Software Coordinator works with the developers of software to be used in YMP-LBNL quality-affecting work to ensure the development process proceeds according to OCRWM QA Program requirements for software. The Software Coordinator is responsible for providing software configuration management administrative support and coordinating activities between YMP-LBNL staff and BSC in accordance with AP-SI.1Q, *Software Management.*

3.5.7   Training Coordinator

The Training Coordinator is responsible for ensuring that YMP-LBNL staff have the necessary QA training based on input from BSC, the Deputy PM, or applicable supervisor, for coordinating the training with BSC, and for providing for supplemental LBNL training as deemed necessary, in accordance with AP-2.1Q, *Indoctrination and Training of Personnel.* In addition, the Training Coordinator is responsible for ensuring that YMP-LBNL staff have documented position descriptions and that required education and experience have been verified in accordance with AP-2.2Q, *Establishment and Verification of Required Education and Experience of Personne*l.

3.5.8   Scientific Notebook Coordinator

The Scientific Notebook Coordinator is responsible for issuing scientific notebooks, overseeing the initial entry process, coordinating technical and compliance reviews thereof, and updating LBNL information in the centralized BSC Scientific Notebook Register.

3.5.9   Records Coordinator

The Records Coordinator coordinates the submittal of all applicable records developed under the OCRWM QA Program to the YMP in accordance with AP-17.1Q, provides for controlled distribution of YMP-LBNL QIPs, TIPs and other documents that prescribe quality-affecting activities in accordance with AP-6.1Q, *Controlled Documents*. In addition, the Records Coordinator works with the scientific staff in the development of the Document Input Reference System (DIRS) for technical products, as applicable .

3.5.10   Measuring and Test Equipment (M&TE) Coordinator

The M&TE Coordinator prepares and maintains an up-to-date list of M&TE, coordinates internal and vendor calibration services, oversees all other M&TE processes in accordance with AP-12.1Q, *Control of Measuring and Test Equipment and Calibration Standards*, and maintains all associated records thereof.

3.6   Line Management Technical Personnel

Technical personnel include Group Leaders (GLs), Principal Investigators (PIs), and Scientific Staff. As depicted in Attachment 1, technical work performed by LBNL is grouped into three areas. The hierarchy suggested in the organization chart conveys levels of responsibility. All individuals performing technical work on the YMP report directly to the PM or designated PI.

Scientific personnel are responsible for carrying out assigned YMP-LBNL tasks and satisfying all technical and quality requirements including those specified in contracts, purchase documents, or management directives. Scientific staff, together with NWP EA technical support staff, are responsible for identifying problems relating to quality and for working with other scientific/EA personnel to define and implement solutions to problems.

3.6.1   Group Leaders

GLs serve as focal points for coordinating groups of activities that are categorized by their common nature (e.g., ambient field testing, thermal testing, and modeling). GLs serve as informal advisors to the PM on topics in these areas and may represent LBNL, as the PM's designee, on committees pertaining to their areas of expertise. In some instances GLs may also be PIs. In these instances, the GLs technical and quality responsibilities would be the same as that of a PI.

3.6.2   Principal Investigators

PIs report to the PM and are responsible for managing the technical work of their projects and ensuring that it is carried out in a technically defensible and cost-effective manner under sound QA practices. A PI may work alone on a project, but more commonly is supported by a number of scientific staff who are assigned to various project tasks. PI responsibilities include:

A. establishing the quality standards for their projects/activities in compliance with OCRWM QA Program and supplementary YMP-LBNL QA procedure requirements;

B. assuring that plans, TIPs, scientific notebooks, software, and/or other appropriate documentation, are developed, approved, and followed for applicable quality-affecting activities;

C. assuring implementation of quality requirements and continued compliance with applicable quality-affecting activities;

D. assuring that OCRWM QA and any supplementary YMP-LBNL QA procedures are included in appropriate requests for proposals, bids, contracts, subcontracts, and purchase orders.

3.6.3   Scientific Staff

Scientific staff report to their assigned PI and are responsible for conducting their activities on the YMP in a technically defensible and cost-effective manner which includes compliance with the OCRWM QA Program and YMP-LBNL QA procedures.

3.6.4   Contractors

All organizations, which support or perform YMP-LBNL quality-affecting activities, shall comply with the requirements of the OCRWM QA Program requirements and any applicable YMP-LBNL QA procedures, or another approved program meeting the QARD as specified by written agreement. Written agreements shall be used to document interfaces between such outside organizations and the YMP-LBNL.

3.7   Training Requirements

YMP-LBNL personnel who conduct activities subject to DOE/RW-0033P QARD requirements shall be trained in the applicable OCRWM, YMP, and BSC QA Program QA Program procedures as well as YMP-LBNL QA procedures as deemed appropriate by the Deputy PM, together with the PI and EA Manager.

4. RECORDS

4.1   QA Records

Records associated with this procedure shall be transmitted to the YMP-LBNL Records Coordinator for submittal to the YMP RPC, in accordance with AP-17.1Q.

QA records associated with this procedure may be submitted as a records package or as individual records to consist of the documented delegation of work or authority.

4.2 Non-QA Inclusionary Records

None

4.3 Non-QA Exclusionary Records

None

5. RESPONSIBILITIES

The overall responsibilities of YMP-LBNL staff are as described in Sections 3.4, 3.5 and 3.6 of this procedure.

6. ACRONYMS AND DEFINITIONS

6.1 Acronyms

AP	OCRWM Administrative Procedure
BSC	Bechtel SAIC Company, LLC
CIRS	Condition/Issue Identification and Reporting/ Resolution System
DOE	U.S. Department of Energy
EA	Engineering Assurance
ESD	Earth Sciences Division
GL	Group Leader
LBNL	Lawrence Berkeley National Laboratory
BSC	Bechtel SAIC Company, LLC
M&TE	Measuring and Test Equipment
NWP	Nuclear Waste Program
OCRWM	Office of Civilian Radioactive Waste Management
OQA	Office of Quality Assurance
PI	Principal Investigator
PM	Project Manager
QA	Quality Assurance
QARD	Quality Assurance Requirements and Description
QIP	YMP-LBNL Quality Implementing Procedure

RPC	Records Processing Center
SITP	Scientific Investigation Test Plan
TDMS	Technical Data Management System
TIP	YMP-LBNL Technical Implementing Procedure
YAP	YMP Administrative Procedure
YMP	Yucca Mountain Site Characterization Project

6.2   Definitions

Engineering Assurance (EA): The technical support group within the LBNL NWP that is responsible for assisting YMP-LBNL scientific staff in performing/complying with various technical and administrative OCRWM QA Program requirements.

7.   REFERENCES

DOE/RW-0333P, *Quality Assurance Requirements and Description*

LP-1.1Q-OCRWM, *Organization*

LP-1.0Q-BSC, *Organization*

AP-2.1Q, *Indoctrination and Training of Personnel*

AP-2.2Q, *Establishment and Verification of Required Education and Experience of Personne*l

AP-2.20Q, *Self-Assessments*

AP-3.15Q, *Managing Technical Product Inputs*

AP-REG-001, *Managing Lessons Learned*

AP-REG-004, *Condition/Issue Identification and Reporting/ Resolution System*

AP-6.1, *Controlled Documents*

AP-7.7Q, *Acceptance of Items and Services*

AP-12.1Q, *Control of Measuring and Test Equipment and Calibration Standards*

AP-17.1Q, *Record Source Responsibilities for Inclusionary Records*

AP-SI.1Q, *Software Management*

AP-SIII.3Q, *Submittal and Incorporation of Data to the Technical Data Management System*

YMP-LBNL-QIP-4.3, *Procurement Request Initiation and Acceptance of "Q" Products/Services.*

YMP-LBNL-QIP-5.2, *Preparing Quality and Technical Implementing Procedures*

YMP-LBNL-QIP-6.1, *Document Review*

8. ATTACHMENTS

Attachment 1   YMP-LBNL Organizational Structure and BSC QA/OQA Interface

9. REVISION HISTORY

07/21/95 - Revision 0, Modification 0
    Initial issue.

09/06/95 - Revision 0, Modification 1
    Addressed delegation of work and signature authority.

12/07/95 - Revision 0, Modification 2
    Revised procedure to better reflect QARD requirements.

10/21/96 - Revision 1, Modification 0
    Revised procedure to reflect requirements changes in QARD, Rev. 5. Made
    general clarifications and improvements.

06/02/97 - Revision 2, Modification 0
    Revised procedure to introduce the term Engineering Assurance (EA) and to
    identify the role and responsibilities of the EA Manager and OQA
    representative.

04/16/99 - Revision 3, Modification 0
    Revised procedure to update the YMP-LBNL project organization to reflect
    changes within the ESD and procedural changes within the YMP QA Project.
    All pages of this procedure have been revised.

09/22/00 - Revision 3, Modification 1
    Revised procedure to reflect current upper tier documents; added position of
    Project Control Coordinator and M&TE Coordinator.

07/30/01 - Revision 4, Modification 0
    Revised procedure to include the role of M&O QA and reflect current upper tier
    documents.

03/15/02 - Revision 4, Modification 1
    Revised organization to incorporate the position of Deputy PM, changed M&O
    QA to BSC QA, added the function of the Scientific Notebook Coordinator, and
    updated references to current procedures.

APPROVALS

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Date

Technical Reviewer: Yvonne Tsang

Date

Technical Reviewer: Peter Persoff

Date

EA Reviewer: Vivi Fissekidou

Date
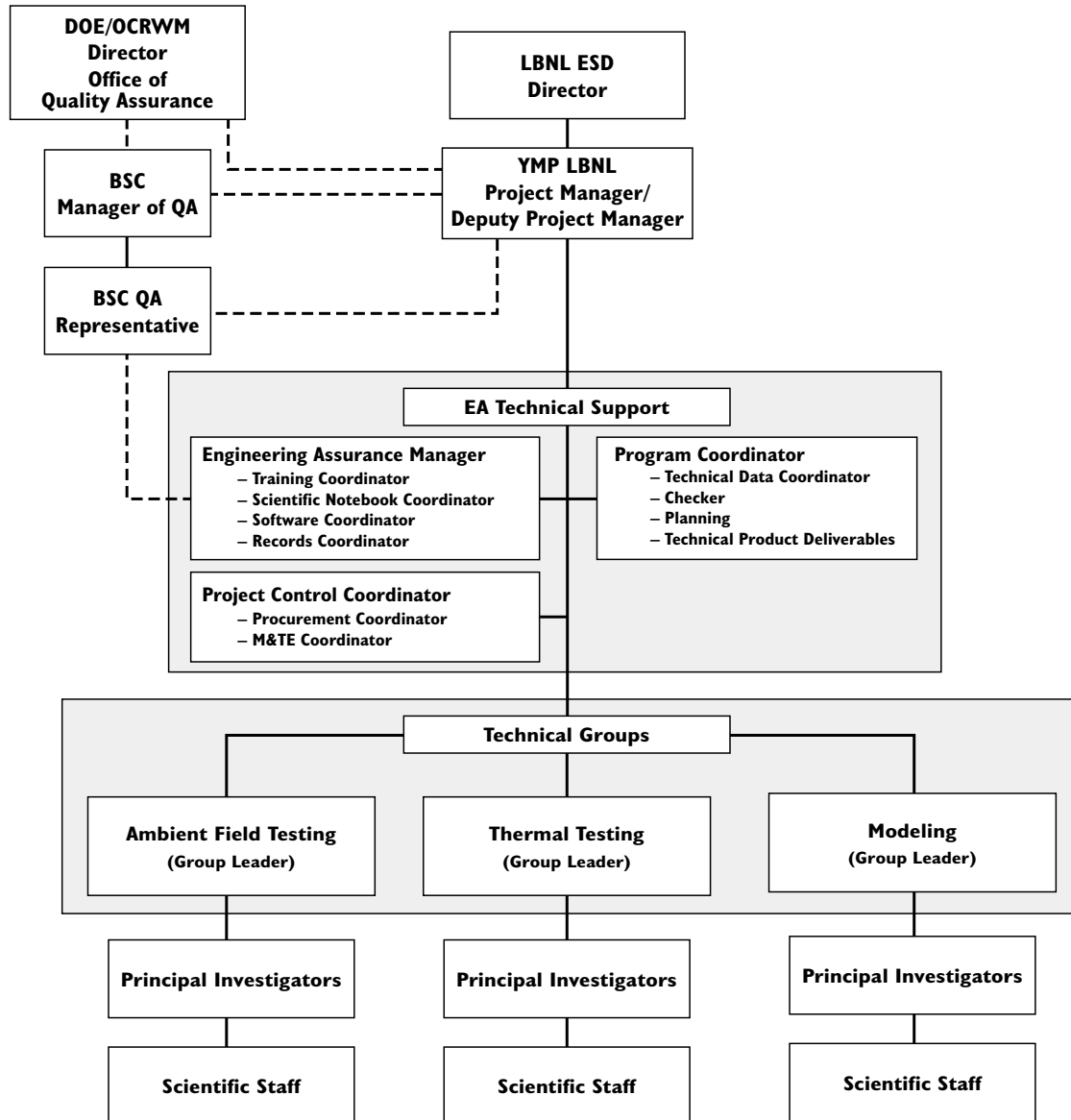

BSC QA Concurrence: Stephen Harris

Date

Project Manager: Gudmundur Bodvarsson

Date

Nuclear Waste Program

DOE/OCRWM Director Office of Quality Assurance

LBNL ESD Director

BSC Manager of QA

YMP LBNL Project Manager/ Deputy Project Manager

BSC QA Representative

EA Technical Support

Engineering Assurance Manager
– Training Coordinator
– Scientific Notebook Coordinator
– Software Coordinator
– Records Coordinator

Program Coordinator
– Technical Data Coordinator
– Checker
– Planning
– Technical Product Deliverables

Project Control Coordinator
– Procurement Coordinator
– M&TE Coordinator

Technical Groups

Ambient Field Testing (Group Leader)

Thermal Testing (Group Leader)

Modeling (Group Leader)

Principal Investigators

Principal Investigators

Principal Investigators

Scientific Staff

Scientific Staff

Scientific Staff

– – – Communication Lines

QA01-001